IN THE CLAIMS:

Please amend the claims as follows.

1. (Currently amended) A dirty memory subsystem for a computer system, the dirty memory subsystem comprising:

storage operable to store dirty indicators and corresponding redundant copies of the dirty indicators, wherein each dirty indicator and the corresponding redundant dirty indicator being associated with a respective block of main memory and being settable to a predetermined state to indicate that the block of main memory associated therewith has been dirtied; and

a control logic operable to read the dirty indicator and the corresponding redundant ~~copies of a~~ dirty indicator from storage and to treat the block of memory associated therewith as dirtied if all or any one of the dirty indicator and the corresponding redundant ~~copies of the~~ dirty indicator has the predetermined state.

2. (Cancelled)

3. (Currently amended) The dirty memory subsystem of claim ~~2~~ 1, wherein in response to all or any of the dirty indicator and the corresponding redundant dirty indicator having the predetermined state, the control logic is operable to cause the block of memory associated with [[a]] the dirty indicator and the corresponding redundant dirty indicator ~~for which at least one copy thereof of the dirty indicator and the corresponding redundant dirty indicator has the predetermined state~~ to be copied from the main memory to another memory.

4. (Original) The dirty memory subsystem of claim 3, wherein the other memory is another main memory.

5. (Currently amended) The dirty memory subsystem of claim 1, operable to reset each of the dirty indicator and the corresponding redundant ~~copies of a~~ dirty indicator to a state other than the predetermined state after reading the dirty indicator and the corresponding redundant ~~copies of the~~ dirty indicator.

6. (Currently amended) The dirty memory subsystem of claim 1, wherein the storage comprises at least two memory units, one memory unit ~~each~~ for storing the dirty indicators and another memory unit for storing the corresponding [[a]] redundant ~~set of~~ dirty indicators.

7. (Currently amended) The dirty memory subsystem of claim 6, wherein the control logic includes comparison logic for each of the memory units for determining whether ~~a copy of~~ all or any of the dirty indicator and the corresponding redundant dirty indicator is set to the predetermined state.

8. (Currently amended) The dirty memory subsystem of claim 7, wherein the control logic includes output logic responsive to the output of each comparison logic for determining whether a block of memory associated with a dirty indicator and the corresponding redundant dirty indicator is to be treated as dirtied.

9. (Original) The dirty memory subsystem of claim 1, wherein each dirty indicator comprises a single bit.

10. (Original) The dirty memory subsystem of claim 1, wherein a block of main memory is a page of main memory.

11. (Currently amended) The dirty memory subsystem of claim 1, ~~comprising a hierarchical dirty memory~~ wherein the storage comprises a lower level memory that includes groups of the dirty indicators and groups of the corresponding redundant copies of the dirty indicators, and at least one higher level memory that includes groups of dirty group indicators and groups of corresponding redundant

copies of the dirty group indicators, wherein each dirty group indicator and a corresponding redundant dirty group indicator being settable to a given state indicative that a group of dirty indicators of the lower level memory has at least one dirty indicator in the predetermined state indicative that a block of memory associated therewith has been dirtied.

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~~12~~. (Currently amended) A computer system comprising a dirty memory subsystem and at least one processing set that includes main memory, the dirty memory subsystem comprising:

storage operable to store dirty indicators and corresponding redundant copies of the dirty indicators, wherein each dirty indicator and the corresponding redundant dirty indicator being associated with a respective block of main memory and being settable to a predetermined state to indicate that the block of main memory associated therewith has been dirtied; and

a control logic operable to read the dirty indicator and the corresponding redundant ~~copies of a~~ dirty indicator from storage and to treat the block of memory associated therewith as dirtied if all or any one of the dirty indicator and the corresponding redundant ~~copies of the~~ dirty indicator has the predetermined state.

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~~13~~. (Original) The computer system of claim ~~12~~, comprising a plurality of processing sets that each include main memory.

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~~14~~. (Original) The computer system of claim ~~13~~, wherein the processing sets are operable in lockstep, the computer system comprising logic operable to attempt to reinstate an equivalent memory state in the main memory of each of the processor following a lockstep error.

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~~15~~. (Currently amended) A method of managing reinstatement of an equivalent memory state in the main memory of a plurality of processing sets of a fault tolerant computer following a lock step error, wherein a dirty memory subsystem

stores dirty indicators and corresponding redundant copies of the dirty indicators that are settable to a predetermined state indicative that a block of main memory associated therewith has been dirtied, the method including the performance of at least one cycle of copying any page of main memory that has been dirtied from a first processing set to each other processing set, each cycle including reading a ~~the~~ dirty indicator and a corresponding redundant ~~copies of a dirty~~ indicator from storage and treating a block of memory associated with the dirty indicator and the corresponding redundant ~~copies~~ dirty indicator as dirtied if all or any one of the dirty indicator and the corresponding redundant ~~copies of the~~ dirty indicator has the predetermined state.

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~~16.~~ (Currently amended) The method of claim ~~15~~ 18, further comprising in response to all or any of the dirty indicator and the corresponding redundant dirty indicator having the predetermined state, copying a block of memory associated with the dirty indicator and the corresponding redundant dirty indicator ~~for which at least one copy has the predetermined state is copied~~ from the main memory to another memory.

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~~17.~~ (Original) The method of claim ~~16~~ 19, wherein the other memory is another main memory.

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~~18.~~ (Currently amended) The method of claim ~~15~~ 18, ~~wherein~~ further comprising resetting each of the dirty indicator and the corresponding redundant ~~copies of the~~ dirty indicator ~~are reset~~ to a state other than the predetermined state after reading the dirty indicator and the corresponding redundant ~~copies of the~~ dirty indicator.

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~~19.~~ (Currently amended) The method of claim ~~15~~ 18, comprising maintaining ~~at least two copies of a~~ the dirty ~~indicator~~ indicators in ~~at least two~~ one memory ~~units~~ unit and the corresponding redundant dirty indicators in another memory unit.

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20. (Currently amended) The method of claim ~~19~~, comprising separately assessing the state ~~of copies~~ of a dirty indicator and a corresponding redundant dirty indicator for each of the memory units for determining whether all or any one of the [[a]] dirty indicator and the corresponding redundant dirty indicator is set to the predetermined state.

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21. (Currently amended) The method of claim [[20]] ~~15~~, ~~comprising responding to each assessment and determining that the block of memory is dirty if any assessment indicates that the dirty indicator has the predetermined state~~ wherein the storage comprises a lower level memory that includes groups of the dirty indicators and groups of the corresponding redundant copies of the dirty indicators, and at least one higher level memory that includes groups of dirty group indicators and groups of corresponding redundant copies of the dirty group indicators, wherein each dirty group indicator and a corresponding redundant dirty group indicator being settable to a given state indicative that a group of dirty indicators of the lower level memory has at least one dirty indicator in the predetermined state indicative that a block of memory associated therewith has been dirtied.

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22. (Original) The method of claim ~~15~~, wherein each dirty indicator comprises a single bit.

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23. (Original) The method of claim ~~15~~, wherein a block of main memory is a page of main memory.

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24. (Currently amended) The method of claim [[15]] ~~21~~, further comprising ~~a hierarchical dirty memory~~ reading a dirty group indicator and a corresponding redundant dirty group indicator from the higher level memory and treating the group of dirty indicators associated therewith as dirtied in response to all or any one of the dirty group indicator and the corresponding redundant dirty group indicator having the given state.

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25. (Currently amended) The dirty memory subsystem of claim 1, wherein, after both the dirty indicator and the corresponding redundant ~~copies of the~~ dirty indicator are read from storage, any difference between a state of the stored dirty indicator and corresponding ~~redundant copies of the~~ dirty indicator is considered as indicative of memory corruption.

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26. (New) The dirty memory subsystem of claim 11, wherein the control logic is operable to read a dirty group indicator and a corresponding redundant dirty group indicator from the higher level memory and to treat the group of dirty indicators associated therewith as dirtied in response to all or any one of the dirty group indicator and the corresponding redundant dirty group indicator having the given state.

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27. (New) The dirty memory subsystem of claim 12 ~~26~~, wherein, in response to all or any one of the dirty group indicator and the corresponding redundant dirty group indicator having the given state, for each dirty indicator in the group of dirty indicators and for each corresponding redundant dirty indicator of the group of corresponding redundant dirty indicators, the control logic is operable to read the dirty indicator and the corresponding redundant dirty indicator from the lower level memory and to treat the block of memory associated therewith as dirtied in response to all or any one of the dirty indicator and the corresponding redundant dirty indicator having the predetermined state.

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28. (New) The dirty memory subsystem of claim 1, wherein the dirty indicators being stored in groups with each group having associated therewith a parity indicator computed from the dirty indicator values of the group, wherein the control logic being operable on reading the dirty indicators of a group and a corresponding parity indicator to calculate a parity indicator value based on the dirty indicator values read for the group to determine an integrity of the group, wherein the control logic is configured to identify all dirty indicators of the group as

representing a dirtied state where the calculated parity indicator value is different from the parity indicator value read for that group.

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29. (New) A dirty memory subsystem for a computer system, the dirty memory subsystem comprising:

a lower level memory operable to store groups of dirty indicators and groups of corresponding redundant copies of the dirty indicators, wherein each dirty indicator and the corresponding redundant dirty indicator being associated with a respective block of main memory and being settable to a predetermined state to indicate that the block of main memory associated therewith has been dirtied;

at least one higher level memory operable to store groups of dirty group indicators and groups of corresponding redundant copies of the dirty group indicators, wherein each dirty group indicator and a corresponding redundant dirty group indicator being settable to a given state indicative that a group of dirty indicators of the lower level memory has at least one dirty indicator in the predetermined state indicative that a block of memory associated therewith has been dirtied;

a control logic operable to read a dirty group indicator and a corresponding redundant dirty group indicator from the higher level memory and to treat the group of dirty indicators associated therewith as dirtied in response to all or any one of the dirty group indicator and the corresponding redundant dirty group indicator having the given state; and

wherein, in response to all or any one of the dirty group indicator and the corresponding redundant dirty group indicator having the given state, for each dirty indicator in the group of dirty indicators and for each corresponding redundant dirty indicator of the group of corresponding redundant dirty indicators, the control logic is operable to read the dirty indicator and the corresponding redundant dirty indicator from the lower level memory and to treat the block of memory associated therewith as dirtied in response to all or any one of the dirty

indicator and the corresponding redundant dirty indicator having the predetermined state.